

REMARKS

In the Office Action mailed on October 31, 2006, the Examiner objected to the specification for not defining reference numbers 24 and 33 in Figures 1 and 3. Paragraphs [0029] and [0030] have been amended to define these reference numerals. Support for the amendment to paragraph [0029] can be found in paragraphs [0028] and [0029] and in Figures 1 and 3. For example, paragraph [0028] teaches that numeral 28 refers to a first reactant, numeral 30 refers to a bottle holding the first reactant and numeral 32 refers to a temperature controller. Paragraph [0029] indicates that Figure 1 illustrates a system with two first reactants, while Figures 1 and 3 clearly show identical drawings of the two first reactants (28, 29), the two bottles (30, 31) and valves (20, 22). The structure depicted by numeral 33 is identical to the temperature controller 32. Thus, in view of the disclosure and the identical drawings, Applicants submit that the amendment to indicate that numeral 33 refers to a temperature controller is adequately supported by the specification and figures as filed and does not add new matter. Support for the amendment to paragraph [0030] can be found in reference numerals 20 and 22, which are identical to reference numeral 24 and depict valves. Thus, no new matter is added by the amendment to paragraph [0030].

In addition to the objections to the specification, the Examiner rejected the claims under 35 U.S.C. §103(a) as being unpatentable over the combination of Matsumoto (5,480,818) in view of Penneck (4,985,313). In particular, the Examiner found that Matsumoto discloses a sequential chemical vapor deposition process for depositing aluminum oxide on a substrate from trimethyl aluminum and an oxygen source. While Matsumoto does not teach use of oxygen plasma as the oxygen source, this deficiency was found to be made up for by Penneck, which teaches moving a substrate with a metal layer through an oxygen plasma to form a coating of metal oxide. Applicant respectfully disagrees.

In support of the asserted combination, the Examiner found that Matsumoto allows for movement of the substrate from a chamber where aluminum oxide is deposited to a plasma deposition chamber. While this may be the case, the transfer is not for the purpose of completing the aluminum oxide deposition. Rather, the purpose of moving the substrate to a plasma deposition chamber is to deposit *an entirely different film*. See, for example, column 11, lines 16-30. Thus, the teaching of movement to a separate plasma deposition chamber is completely

Appl. No. : 10/683,727
Filed : October 10, 2003

unconnected to the process for depositing aluminum oxide and does not teach or suggest modifying the aluminum oxide deposition process in any way. In particular, the movement of the substrate from one chamber to another *for separate deposition processes* does not in any way teach or suggest using a plasma reactant for the aluminum oxide deposition process.

Further, while Matsumoto is concerned entirely with forming thin film transistors, Penneck, the secondary reference, is concerned with forming aluminum oxide on a wire or cable. It has no teaching or suggestion that the process could be modified to be of any value in the formation of thin film transistors. Because of the significant difference in the focus of the two references, one of skill in the art would not be motivated to combine Penneck with Matsumoto.

In addition, the process disclosed in Penneck and cited by the Examiner (column 11, lines 1-18) is directed to the oxidation of a complete aluminum layer. That is, the aluminum layer is deposited completely and then subsequently oxidized in a plasma oxidation unit. There is no teaching or suggestion that the plasma can be supplied in the same reactor in which the aluminum is deposited, much less that it could be supplied alternately in a cyclical process to grow aluminum oxide.

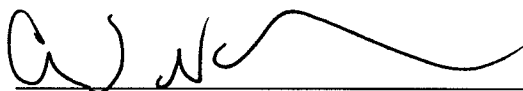
Thus, there is simply no teaching or suggestion in either reference of using atomic oxygen in a cyclical process to deposit aluminum oxide on a substrate.

In view of the above remarks, Applicants respectfully submit that the Examiner has not made a prima facie case of obviousness and request withdrawal of the rejections under 35 U.S.C. §103(a) and allowance of the pending claims.

Respectfully submitted,

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Dated: January 31, 2007

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